THAT WHICH IS CLAIMED IS:

SUBST

1. A method of processing a video data stream comprising a series of pixel values corresponding to pixel sites in an electronic imaging device so as to correct defective pixel values, comprising filtering the video data stream in real time so as to correct or modify defective pixel values.

2. A method as claimed in Claim 1, wherein the filtering of each pixel value is based on the values of a plurality of neighboring pixel values.

3. A method as claimed in Claim 2, wherein the filtering of each pixel value uses the value of the current pixel as part of a data set including the values of said neighboring pixels in determining whether and/or how to correct or modify the current pixel value.

4. A method as claimed in Claim 1, further including the step of identifying those pixel values which are most severely defective, storing the locations of said most severely defective pixels in a defect store, applying a first filtering algorithm to those pixels whose locations are not stored and applying a second filtering algorithm to those pixels whose locations have been stored.

5. A method as claimed in Claim 4, wherein the filtering of each pixel value is based on the values of a plurality of neighboring pixel values and said first filtering algorithm uses the value of the current pixel as part of a data set including the values of said neighboring pixels.

6. A method as claimed in Claim 5, wherein said first filtering algorithm comprises sorting the values of the current pixel and of said neighboring pixels into rank order and modifying the current pixel value on the basis of its place in said rank order.

7. A method as claimed in Claim 6, wherein the value of the current pixel is modified if its rank is greater than or less than predetermined maximum and minimum rank values.

8. A method as claimed in Claim 7, wherein:

the current pixel value is replaced by the value of the pixel having said predetermined maximum rank value, if the current pixel value has a rank greater than said predetermined maximum rank value;

the current pixel value is replaced by the value of the pixel having said predetermined minimum rank value, if the current pixel value has a rank less than said predetermined minimum rank value; and

the current pixel value is left unchanged if the current pixel value has a rank less than said predetermined maximum rank value and greater than said predetermined minimum rank value.

9. A method as claimed in Claim 8, wherein said predetermined maximum rank value is the highest ranking of said neighboring pixels and said predetermined minimum rank value is the lowest ranking of said neighboring pixels.

10. A method as claimed in Claim 4, wherein pixel locations to be stored in said defect store are selected on the basis of the output of said first filtering algorithm.

11. A method as claimed in Claim 10, wherein the decision to store a pixel location is based on the magnitude of the difference between the current pixel value and the pixel value output by said first filtering algorithm.

12. A method as claimed in Claim 11, wherein, for each frame of video data, the location of at least that pixel value having the greatest difference in magnitude from the output of the first filtering algorithm is stored in said defect store.

13. A method as claimed in Claim 4, wherein the filtering of each pixel value is based on the values of a plurality of neighboring pixel values and said second filtering algorithm excludes the value of the current pixel from a data set including the values of said neighboring pixels.

14. A method as claimed in Claim 13, wherein said second filtering algorithm replaces the value of the current pixel with the median value of said neighboring pixels.

15. A method as claimed in Claim 4, wherein the information stored in said defect store includes the location of each pixel selected for storage and information indicating the severity of the defect.

16. A method as claimed in any Claim 4, wherein the contents of the defect store are updated in accordance with a predetermined memory management algorithm.

17. A method as claimed in Claim 16, wherein said defect store includes the location of each pixel selected for storage and information indicating the

severity of the defect, and wherein said information regarding the severity of the defect is updated on the basis of an auto-regression function applied to the current value of each stored pixel value, the current output from the second filtering algorithm and the current stored value.

18. A method as claimed in any Claim 4, wherein said first and second filtering algorithms are applied to the video data stream in parallel and the final output pixel value is selected from the outputs of the first and second filtering algorithm depending on whether the corresponding pixel location is present in the defect store.

19. Apparatus for processing a video data stream comprising electronic filter means adapted to implement the method as defined in Claim 1.

20. Apparatus as claimed in Claim 19, comprising means for sampling a video data stream in order to obtain a data set comprising a current pixel value and a plurality of neighboring pixel values.

21. Apparatus as claimed in Claim 20, further including means for sorting said neighboring pixel values into rank order.

22. Apparatus as claimed in Claim 21, further including means for comparing the current pixel value with neighboring pixel values of selected ranks and for generating a first filter output on the basis of said comparison.

23. Apparatus as claimed in Claim 22, further including means for determining the median

value of said neighboring pixels and generating a second filter output equal to said median value.

24. Apparatus as claimed in Claim 23, further including a defect store for storing pixel locations selected on the basis of said first filter output.

25. Apparatus as claimed in Claim 23, further including output means for generating a final output pixel value selected from said first and second filter outputs on the basis of the contents of said defect store.

26. An electronic imaging system including an image sensor array having an output connected to apparatus as claimed in Claim 19.

27. A method of filtering a video data stream comprising a series of pixel values corresponding to pixel sites in an electronic imaging device, wherein the filtering of each pixel value is based on the values of a plurality of neighboring pixel values using the value of the current pixel as part of a data set including the values of said neighboring pixels, and wherein said filtering comprises sorting the values of the current pixel and of said neighboring pixels into rank order and modifying the current pixel value on the basis of its place in said rank order.

28. A method as claimed in Claim 27, wherein the value of the current pixel is modified if its rank is greater than or less than predetermined maximum and minimum rank values.

29. A method as claimed in Claim 28, wherein:

the current pixel value is replaced by the value of the pixel having said predetermined maximum rank value, if the current pixel value has a rank greater than said predetermined maximum rank value;

the current pixel value is replaced by the value of the pixel having said predetermined minimum rank value, if the current pixel value has a rank less than said predetermined minimum rank value; and

the current pixel value is left unchanged if the current pixel value has a rank less than said predetermined maximum rank value and greater than said predetermined minimum rank value.

30. A method as claimed in Claim 29, wherein said predetermined maximum rank value is the highest ranking of said neighboring pixels and said predetermined minimum rank value is the lowest ranking of said neighboring pixels.

31. Apparatus for processing a video data stream comprising electronic filter means adapted to implement the method as defined in Claim 27.

32. An electronic imaging system including an image sensor array having an output connected to apparatus as claimed in Claim 31.